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10/668,264	09/24/2003	Junichi Hakamada	25714	7863

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NATH & ASSOCIATES
1030 15th STREET, NW
6TH FLOOR
WASHINGTON, DC 20005

EXAMINER	
WOODS, ERIC V	

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,264	HAKAMADA, JUNICHI	
	Examiner	Art Unit	
	Eric V. Woods	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5,6,8,9,11,12,14,15,17 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6,11,12,17 and 18* is/are allowed.

6)☒ Claim(s) *2,3,5,8,9,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 1-16 of Remarks, filed 8 April 2005, with respect to the rejections of claims 6, 11-12, and 17-18 under 35 U.S.C. 112, second paragraph and any other statutory basis, have been fully considered and are persuasive in light of applicant's amendments. All rejections of those claims under 35 U.S.C. 112, second paragraph and any other statute, have been withdrawn.

2. Applicant's arguments – see pages 4-5 of Remarks – with respect to the rejections of claims 2, 3, and 5 under 35 U.S.C. 112, second paragraph, as lacking essential elements have been fully considered but are not persuasive. See the "Claim Rejections – 35 U.S.C. 112" below for an analysis of why they are neither persuasive nor effective.

3. However, applicant's arguments – see pages 1-7 – with respect to all other rejections under 35 U.S.C. 112 have been fully considered and are persuasive. With the exceptions stated above, all other rejections under 35 U.S.C. 112, second paragraph, stand withdrawn.

4. All rejections against claims 1, 4, 7, 10, 13, and 16 stand withdrawn since applicant's amendment has canceled those claims.

5. Applicant's arguments, see pages 1-9 of Remarks, filed 8 April 2005, with respect to the rejection(s) of claim(s) 2-3, 7-8, and 14-15 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejections have been

withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tanaka.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 2-3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 2 and 5 stand rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a user input section or user preference input section, which are the same thing. Applicant clearly discloses in the specification (page: line format → 1:15-22, 5:1-7, and in many other portions of the specification) that the apparatuses operate by obtaining some information from the user regarding user preferences, and since the invention very clearly operates upon a computer, e.g. the "computer program product" of claims 11-12 and others operates upon a "font generation apparatus" clearly disclosed by the specification to be a computer, the recited computer obviously have some form of input device, e.g. see Fig. 1 – element 2 – the operation unit – is cleared in indicated in the specification on page 10, lines 19-22, as being "an input device, such as a keyboard, a mouse, or the like, for the user to choose a favorite font character ..." Applicant cannot take an inherency position here; since the apparatuses are not specifically computer-implemented, and

that position is never taken by applicant, that argument cannot be used, and it was not advanced when applicant had a chance to respond to the rejection. Both independent claims – 2 and 5 – recite "a font character selected by the user" and "user preferences" and the user must inherently provide that information to the font-generating apparatus. Thusly, applicant's argument is incorrect and the claims do lack essential elements.

9. Claim 3 is rejected for not correcting the deficiencies of its parent claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. It has been established already that claims 2, 8, and 14 stand and fall together, e.g. they are method, apparatus, and computer program product reciting the same steps, and claims 3, 9, and 15 also stand and fall together. Thusly, any rejection against one is valid against all.

13. Claims 2, 8, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne in view of Syeda-Mahmood et al (US 6,621,941 B1)('Syeda') and Tanaka et al (US 5,062,047).

14. As to claims 2, 8, and 14,

An apparatus for font generation comprising:

-A basic font storage section storing a font character of a basic font for generating a font character; (Browne pg. 1 (specification), lines 16-20, and pg. 2, lines 20-23)

-A feature parameter storage section storing a feature parameter expressing a feature of the font character; (Browne pg. 2 (spec), lines 3-6, the "subjective characteristic" is comparable to the 'feature parameter' recited by applicant, page 3, lines 1-12, and Figs. 1-2, where user clearly modifies character to have a certain appearance; this clearly requires that the computer system of Browne, shown in Fig. 6 on which this program runs have some storage mechanism for the recited feature parameter or subjective characteristic)

-A font generation section configured to generate new font characters by deforming the font character of the basic font based on the plural feature parameters generated in this genetic algorithm processing section; and (Browne Figs. 1 and 2, 3:13-25 where clearly the system / program of Browne performs the generation of new version of existing font characters; 6:8-22 discloses genetic algorithms used for the method shown in Fig. 5. Clearly, new characters are generated as per Figs. 1 and 2, and plural characteristics are shown in the method illustrated in Fig. 5, and the genetic algorithm section is used to evolve the new parameters to be shown to the user each time)

-A display unit displaying the new font characters generated in the font generation section; wherein (Browne Fig. 6, clearly showing a video display 114, where such results would be displayed; clearly, as shown in Figs. 1 and 2, the characters would be shown to the user so that the user would see the results of the user's choice)

-An input unit scanning a character handwritten by the user; and (Syeda 1:20-67, clearly disclosing scanning of handwritten documents or sections thereof, and Fig. 1 shows a section of document before it is processed, and portions of the processing are illustrated in Figs. 5A and 5B)(Tanaka Fig. 3, blocks 7 and 8 (5:4-20) – but also Tanaka Fig. 1, step a3, where Tanaka discloses that it is well known (1:50-65) to compare extracted characters from an OCR process to known characters in order to perform character recognition – again, see specifically 1:52-60, where feature data is extracted and compared with reference character data, which could obvious be the "basic font" of applicant)(Tanaka Fig. 1, step a1, Fig. 2, step b2, Fig. 3, part 3 – "reading", et cetera)

-A character feature extraction section configured to recognize a character from character data scanned by the input unit, to compare the recognized character and the font character of the basic font, and to extract a feature of the handwritten character as the feature parameter. (*Prima facie*, the extraction of text (Figs. 1, 5A, 5B, and 15) shows that the characters are recognized by the system (e.g. normal full-text optical character recognition (OCR) as taught by Syeda in 1:55-67). Clearly, the system of Syeda recognizes the characters.)(Syeda clearly teaches a "Feature Extraction Module" in 3:64-67 and 4:1-8, with the operation of that system covered in 5:5-22. Clearly, Syeda teaches in 8:25-40 the extraction of features from the characters based on affine

curve systems to enable recognition of the characters. Further, clearly certain details of the character are measured – that is, Syeda teaches that the hashed image base points are used to compute candidate poses (e.g. characters). As such, the variations are obviously measured, as the features are extracted and matched to candidate poses (see Fig. 5B))(Tanaka Fig. 3, blocks 7 and 8 (5:4-20) – but also Tanaka Fig. 1, step a3, where Tanaka discloses that it is well known (1:50-65) to compare extracted characters from an OCR process to known characters in order to perform character recognition – again, see specifically 1:52-60, where feature data is extracted and compared with reference character data, which could obvious be the "basic font" of applicant)

-The genetic algorithm processing section determines the feature parameters according to the preferences of a user based on a font character selected by the user from among the new font characters displayed on the display unit, (Browne specification 5:10-18)

-The font generation section creates a font based on the feature parameter according to the preferences of the user determined by the genetic algorithm processing section. (Browne 5:10-23, where the font is created / calculated at the end; Browne 6:8-22 discloses genetic algorithms for the purpose, as illustrated in the method of Fig. 5).

Reference Browne clearly discloses all the limitations of this claim of the instant application. As illustrated above, the Browne reference teaches a system that evolves a font according to user preferences based on user-selected parameters (Figs. 1 and 2) and outputs a font (see Fig. 5). Clearly, the Browne reference is analogous art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Browne reference to utilize only one parameter

instead of multiple parameters as shown in Fig. 5. It would be *prima facie* obvious that the system of Browne would show characters after each parameter is modified or selected as shown in Fig. 5, because as Browne clearly shows in Figs. 1 and 2, a different sequence of selections would change the output results. Further, both references use genetic algorithms to perform this task.

Applicant's invention only serves to automate the process – e.g. the user would indicate through some methodology the one desired parameter to alter, and the results would be shown in the screen. Under In re Venner, 120 USPQ 192 (CCPA 1958), "...it is well settled that is "invention" to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result" (In re Rundell, 18 CCPA 1290, 48 F.2d 958, 9 USPQ 220). Clearly, applicant's improvement over Browne is at best incremental and this improvement is **not** patentable.

Finally, Browne discloses in claim 4 (p. 10, specification) that all the fonts bred over a generation are summed by the algorithm to provide a fitness function to determine said selection – that is, Browne is already claiming that which is recited by applicant, a single-valued parameter.

Reference Browne does not explicitly teach this limitation. Reference Syeda, as discussed above, clearly teaches all the additional limitations of this claim. The system of Syeda recognizes handwriting and measures features, amongst other capabilities. Clearly, the process of altering a font via chosen parameters on the screen would be somewhat time-consuming, and adding the ability of the user to input a desired character representative of a desired end point – e.g. desired end character shape as a

starting point would greatly simplify the operations in Browne from the point of view of the user of such a system. Clearly, Syeda can put text into another program (since it teaches OCR and grouping of words) that could then alter the text as per the system of Browne. Thusly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the font evolution system of Browne with the OCR and handwriting input of Syeda via obvious modification so that the starting point for the evolution of a font would be based on parameters extracted by the handwriting recognition portion of the claimed feature extraction section.

Reference Tanaka is brought in to address certain arguments by applicant. The Tanaka reference is classic and representative of standard techniques of OCR (optical character recognition) from documents. Syeda does in fact teach the recited comparison, but Tanaka is brought in as further backup of that. Conventional OCR performs the recited comparisons as set forth in that section. Syeda clearly teaches that conventional OCR techniques are useful once the actual characters have been isolated (1:55-65), or the characters are typed rather than handwritten (see Figs. 9 and 10 for example). Tanaka merely teaches and explains conventional OCR techniques, thusly meeting all of the limitations of the above claim.

Finally, it would have been obvious that since the apparatus of claim 2 can be software, e.g. a computer program product (claim 8) or method (claim 14) could perform the recited method, that the various components of the recited apparatus (or program) are arbitrary, in that it is a fundamental of the art that software can written in any manner desired with any number of arbitrary parts arranged in any arbitrary manner.

Therefore, having the character feature extraction section perform both the comparison and extraction would be a trivially obvious variant. Further, obviously Tanaka teaches that the extraction section both extracts and compares anyway, and Syeda clearly teaches that features can be extracted and passed on. It would have been obvious to one of ordinary skill in the art that such data should be passed to the genetic algorithm section for the reasons set forth above.

This clearly addresses both arguments of applicant as presented in Remarks – and as stated before, arrangement of the locations of features of the invention when they are not relevant to function is unpatentable anyway (*In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)*, for example). Since the invention can be arbitrarily defined and/or divided since it is software, the argument is essentially moot. Further, it still would have been obvious to have the character feature extraction perform both, as Tanaka clearly teaches that the extracted features are compared with known characters and that extracted feature groups are compared to a dictionary to ascertain which of various characters they might be (Tanaka 5:6-58), and clearly Syeda teaches as above that features can be extracted to modify fonts, where it would be obvious that if the character were recognized and information extracted as part of the process, it would obviously do both.

15. Claims 3, 9, and 15 are rejected under 35 U.S.C. 103(a) as unpatentable over Browne and Tanaka in view of Sims (Sims, Karl – "Artificial Evolution for Computer Graphics").

16. As to claims 3, 9, and 15:

The apparatus of claim 1, wherein

-The genetic algorithm processing section generates plural new feature parameters by performing genetic algorithm processing including crossover and mutation on two of the feature parameters selected from the feature parameter.

Reference Browne teaches implicitly all the limitations of the above-recited claim. Browne teaches genetic algorithms of the general type in Sims, and states that font parameters are equated with "genes" which are then "cross-bred" (pg. 8, lines 7-22). Reference Sims teaches crossovers (section 3.3, page 321) and mutation (section 3.2, page 321), which are the two recited genetic operations in the above claims. Clearly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the font evolution of Browne with the algorithms of Sims, as Browne clearly teaches the use of these algorithms without being explicit about how they work.

Allowable Subject Matter

17. Claim 6, 11-12, and 17-18 are allowed.

18. The following is an examiner's statement of reasons for allowance: as suggested in the prior Office Action, the cited claims were rewritten in independent format and changes were made to correct the deficiencies resulting in a previous rejection under 35 U.S.C. 112, second paragraph. The allowable subject matter in these claims is, specifically, the enumeration of various features of radicals of a font character, which as the claimed language reads (and the specification supports) is directed to CJK (that is,

ideograph-based) languages primarily, where these are not in the prior art as a basis for genetically evolving a font, and further the apparatus, method, and computer program product are all directed to a user evolving a basic

19. Claim 5 would be allowable if the deficiencies cited in the rejection of the claim under 35 U.S.C 112, second paragraph above were corrected.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V. Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-4:30 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

JEFFERY BRIER
PRIMARY EXAMINER

June 4, 2005